Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Previously presented) A computer storage medium having computer-executable instructions, comprising:

maintaining first interval vector, the first interval vector comprising at least two intervals of versions, each interval having an upper bound and a lower bound, and the first interval vector comprising at least one gap in versions between two intervals;

evaluating the first interval vector to identify the gap;

using the gap in the first interval vector to determine that a resources is out-of-sync between a first members and a second member of a replica set, wherein the resource has a version contained within the gap of the first interval vector;

synchronizing the resources; and

updating the first interval vector to indicate that the resources is synchronized.

2-3. (Canceled)

4. (Previously presented) The computer storage medium of claim 1, wherein each version is a number.

5. (Previously presented) The computer storage medium of claim 1, wherein the intervals of the first interval vector are represented as nodes of a binary search tree.

6. (Previously presented) The computer storage medium of claim 5, wherein the binary search tree is selected from the group consisting of an AVL tree, a red-black tree, and a splay tree.

7. (Previously presented) The computer storage medium of claim 5, wherein each non-terminal node of the binary search tree has at least one child, the child having an interval with an upper bound less than the lower bound of the interval in the child's parent node or having an interval with a lower bound greater than the upper bound of the child's parent node.

8. (Previously presented) The computer storage medium of claim 5, wherein updating the first interval vector to indicate that the at least one resource is synchronized comprises reducing the number of nodes in the binary search tree.

9. (Previously presented) The computer storage medium of claim 1, further comprising transmitting a second interval vector from the second member of the replica set to the first member of the replica set, the second interval vector serving to distinguish updates from conflicts.

10. (Previously presented) The compute storage medium of claim 1, wherein the out-of-sync resource is organized in a sequence determined by its corresponding version number and wherein synchronizing the at least one resources comprises transmitting the resources in an order other than the sequence.

11. (Previously presented) The computer storage medium of claim 1, wherein the first interval vector is represented by an interval decision diagram having internal and leaf nodes, wherein internal nodes represent binary digits in a binary expansion of a version sequence number and have two outgoing edges.

12. (Previously presented) The computer storage medium of claim 11, wherein the interval decision diagram remains the same size regardless of the number of intervals in the interval vector.

13-21. (Canceled)

22. (Previously presented) A computer implemented method, comprising:

maintaining a interval vector, the interval vector comprising at least two-intervals of versions, each interval having an upper bound and a lower bound, and the interval vector comprising at least one gap in versions between two intervals;

evaluating the interval vector to identify the gap;

using the gap in the interval vector to determine that a resource is out-of-sync between a first members and a second member of a replica set, wherein the resource has a version contained within the gap of the interval vector;

synchronizing the resource; and

updating the interval vector to indicate that the resources is synchronized.

23. (Previously presented) The method of claim 22, wherein each version is a number.

24. (Previously presented) The method of claim 22, wherein the intervals of the interval vector are represented as nodes of a binary search tree.

25. (Previously presented) The method of claim 24, wherein the binary search tree is selected from the group consisting of an AVL tree, a red-black tree, and a splay tree.

26. (Previously presented) The method of claim 24, wherein each non-terminal node of the binary search tree has at least one child, the child having an interval with an upper bound less than the lower bound of the interval in the child's parent node or having an interval with a lower bound greater than the upper bound of the child's parent node.

27. (Previously presented) The computer implemented method of claim 22, wherein the binary search tree is selected from the group consisting of an AVL tree, a red-black tree, and a splay tree.